



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 2532 MICROBIOCID

Emergency Telephone Number

Medical (708) 920-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 2532 MICROBIOCID

DESCRIPTION: An aqueous solution of an alkyl aryl ammonium chloride and tributyl-tin oxide

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredients as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazards.

INGREDIENT(S)	CAS #	APPROX. %
Bis (tributyltin) oxide	56-35-9	1-10
N-alkyl dimethyl benzyl ammonium chloride	68391-01-5	10-20
Potassium hydroxide	1310-58-3	1-10

SECTION 3 PRECAUTIONARY LABEL INFORMATION

DANGER: Corrosive. Causes eye and skin damage. May be harmful if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing. Keep container closed when not in use. Wear goggles and face shield and rubber gloves when handling. Wash thoroughly after handling. Do not take internally.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Do not induce vomiting. Give water. Call a physician.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician. If breathing has stopped, give cardiopulmonary resuscitation (CPR). Administer oxygen. Call a physician at once.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be



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SECTION 4 FIRST AID INFORMATION

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used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin, Inhalation

EYE CONTACT: Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT: Corrosive to the skin, possibly resulting in third degree burns depending on the length of exposure and on the first aid action given.

INGESTION: Can be harmful.

INHALATION: Can cause severe respiratory irritation.

SYMPTOMS OF EXPOSURE: A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have been conducted on this product. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS): $LD_{50} = 1,260$ mg/kg
95% Confidence Limit = 774 - 2,625 mg/kg

COMMENTS: Some of the toxic signs included ataxia, hypoactivity, diarrhea, respiratory irregularities, and salivation. Deaths occurred 24 to 48-hours after administration of the test article.

RATING: Moderately toxic by ingestion

ACUTE DERMAL TOXICITY (ALBINO RABBITS): $LD_{50} = 2,000$ mg/kg



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SECTION 6 TOXICOLOGY INFORMATION

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COMMENTS: These tests failed to produce deaths during the 14-day test period. There were no significant adverse pharmacotoxic signs noted during the study. Severe local skin reactions were seen during the study and were characterized by severe redness and eschar formation. These findings persisted through the 14-days and were observed at necropsy.

RATING: Essentially non-toxic by skin absorption

PRIMARY SKIN IRRITATION TEST (ALBINO RABBITS):

SKIN IRRITATION INDEX DRAIZE RATING: 4.67/8.0 Severely irritating

COMMENTS: Application of 0.5 ml of product to a 6 cm² site on the shaven back of each of a group of six albino rabbits (4-hour occluded contact) produced severe redness and eschar. Slight swelling was noted early in the study, but resolved by the end of 48-hours. The eschar lasted throughout the test period (several animals sloughed the eschar and were left with a dry flakey area). Animals were euthanized at the end of 14 days.

PRIMARY EYE IRRITATION TEST (ALBINO RABBITS):

EYE IRRITATION INDEX DRAIZE RATING: 14/110 @ 1-hour; 51.3/110 @ 48-hours; 52.3/110 @ 96 hours; 87.8/110 @ day-10 Extremely Irritating - irreversible eye injury (possibly corrosive)

COMMENTS: Instillation of 0.1 ml of product into the conjunctival sac of one eye of each of a group six albino rabbits produced severe ocular injury. Corneal opacity, iritis, and severe conjunctival redness, swelling, and discharge were seen throughout the study. Corneal and conjunctival blistering were seen and one animal developed pannus. The injury did not markedly subside over the course of the study and for humanitarian reasons the animals were euthanized on day 11.

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Amber	FORM: Liquid	ODOR: Almond
DENSITY:	8.38 lbs/gal.	
SOLUBILITY IN WATER:	Completely	
SPECIFIC GRAVITY:	1.01 @ 77 Degrees F	ASTM D-1298
pH (NEAT) =	12.5	
VISCOSITY:	20.1 cps @ 77 Degrees F	ASTM D-2983
FREEZE POINT:	31 Degrees F	ASTM D-1177
FLASH POINT:	None	

NOTE: These physical properties are typical values for this product.



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SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: None

EXTINGUISHING MEDIA: This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use water to cool containers exposed to fire.

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

FEEDING EQUIPMENT: Avoid vitan, propylene, polyurethane and aluminum.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, NO_x may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.



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SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-920-1510)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

This product is toxic to fish. It should not be directly discharged into lakes, ponds, streams, waterways or public water supplies.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D002

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be incinerated in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

CHEMICAL OXYGEN DEMAND (COD): 430,000 mg/L

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - CORROSIVE LIQUID, N.O.S.
CORROSIVE MATERIAL UN 1760
CONTAINS - ALKYL-BENZYL AMMONIUM
CHLORIDE COMPOUND

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:



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SECTION 14 REGULATORY INFORMATION

(CONTINUED)

OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Tributyltin oxide - Corrosive

Alkyl dimethyl benzyl ammonium chloride - Irritant, possible sensitizer

Potassium hydroxide - Corrosive

Tributyltin oxide = TWA 0.1 mg/m³ (skin) ACGIH/TLV

Potassium hydroxide = Ceiling 2 mg/m³ ACGIH/TLV

Potassium hydroxide = Ceiling 2 mg/m³ OSHA/PEL

CERCLA, 40 CFR 117, 302:

This product contains potassium hydroxide, a Reportable Quantity (RQ) substance, and if 100,000 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
(TITLE III) - SECTIONS 302, 311, 312 AND 313:

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 and 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370):
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories:

- XX Immediate (acute) health hazard
- Delayed (chronic) health hazard
- Fire hazard
- Sudden release of pressure hazard
- Reactive hazard

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372):

This product does not contain ingredients (at a level of 1% or greater) on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA):

This product is a registered biocide under FIFRA. Its active ingredients are exempt from TSCA. All other inerts are on the 8(b) Inventory.



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SECTION 14 REGULATORY INFORMATION

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FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA):

EPA Reg. No. 1706-146.

This product is registered for use as a microorganism control chemical used in industrial recirculating cooling water tower systems and used in brewery pasteurizers. In all cases follow instructions on the product label.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:

Consult Section 11 for RCRA classification.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15

(formerly Sec. 307), 40 CFR 116 (formerly Sec. 311):

This product contains the following ingredient covered by the Clean Water Act:

Potassium hydroxide - Section 311

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:

This product contains the following ingredients covered by the Clean Air Act:

Tributyltin oxide - Section 111

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:

None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:

This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:

Regulated in those states using the TLV for potassium hydroxide and tributyltin oxide as a criteria for listing.

SECTION 15 ADDITIONAL INFORMATION

None

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety



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SECTION 16 USER'S RESPONSIBILITY

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information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

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SECTION 17 BIBLIOGRAPHY

(CONTINUED)

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DATE CHANGED: 10/29/90

DATE PRINTED: 08/31/91



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